5.10 ENDANGERED AND THREATENED SPECIES OF FLORA AND FAUNA

5.10.1 Background

In compliance with the Endangered Species Act of 1973 and the Indiana Code Title 14 Article 22 Chapter 34, agencies overseeing Federally-funded projects are required to obtain from the U.S. Fish and Wildlife Service (USFWS) and Indiana Department of Natural Resources (IDNR) information concerning any species listed or proposed for listing on the Endangered Species List that may be present in the area of the proposed development. The impact of the project on any such species must be evaluated and appropriate measures to avoid or compensate for these impacts must be enacted.

5.10.2 Methodology

Requests were made to both the USFWS and the IDNR for information to determine the presence of State and Federally listed wildlife. On January 29, 2002, the USFWS responded with a correspondence identifying listed species known to occur within the vicinity of the study area (**Appendix A**). On August 30, 1999, the IDNR responded with a correspondence identifying listed species that occur or have occurred within 1 mile north and west and ½ mile south and east of Gary/Chicago International Airport within the Highland and Whiting quadrangles, Lake County, Indiana. This correspondence also identified nine natural areas within the study area boundaries that contain a significant number of state-listed wildlife species. All listed wildlife and natural areas can be referenced in the IDNR letter in **Appendix A**. In addition, a copy of the May 27, 2003, correspondence between the IDNR and the Gary/Chicago International Airport in regard to the "Environmental Assessment for the Proposed Homeland Defense Mission Improvements at the Gary/Chicago International Airport" is included in **Appendix C**. Preliminary biological surveys of the study area were conducted by The Louis Berger Group in August 2002 and October 2003 in accordance with Section 7(c) of the Endangered Species Act.

Because the Proposed Action is to occur within the Indiana Lake Michigan Coastal Program (LMCP) area, the applicable summary matrix of laws and guidance documents for this environmental category has been reviewed to confirm that all state and local regulations have been considered in this EIS. The matrix on Natural Areas, Fisheries, Wildlife, and Native and Exotic Species issues can be found in **Appendix C** for reference. Matrix 5-5 Cross-reference of Natural Areas, Fisheries, Wildlife, and Native and Exotic Species Laws and Guidance Documents has been reviewed by the consulting team to confirm that all the identified items have been considered in the evaluation of the endangered and threatened species of flora and fauna impacts as described in this section.

5.10.3 Existing Conditions – 2000

5.10.3.1 Plants

5.10.3.1.1 Federally Listed Species

The USFWS did not report any Federally listed plant species occurring in the vicinity of the study area.

5.10.3.1.2 State-Listed Species

The IDNR reported 18 state-listed plant species as occurring or having previously occurred within the vicinity of the study area. These plants include four endangered, four threatened, nine rare, and one extirpated species. A completed list of plant species of special-status with the potential to occur within the study area that was identified in correspondence with the USFWS and IDNR is included as **Exhibit 5.10-1**.

During field investigations for the wetland delineation report, conducted by J. F. New, eight state-listed plant species were identified within the study area. Variegated horsetail (Equisetum variegatum), state endangered, was present in Wetland 4-R. Meadow spikemoss (Selaginella apoda), state endangered, was located in Wetland 4-P, Wetland 5-C and in the upland area adjacent to Wetland 5-C. Sticky goldenrod (Solidago simplex var. gillmanii), state endangered, was present in Wetland 1-A1 and Wetland 5-A. Great Plains ladies' tresses (Spiranthes magnicamporum), state endangered was present in Wetland 5-H. False water-pepper (Polygonum hydropiperoides), state threatened, was present in Wetland 5-H. Beach sumac (Rhus aromatica var. arenaria), state threatened, was present in the upland area adjacent to Wetland 5-D. Baltic rush (Juncus balticus var. littoralis), state rare, was present in Wetland 1-G, Wetland 1-K, Wetland 1-Q, Wetland 4-R, Wetland 5-C, Wetland 5-D, Wetland 5-E, and Wetland 5-H. Prairie goldenrod (Solidago ptarmicoides), state rare, was present in Wetland 1-A1, Wetland 1-A2, Wetland 1-F, Wetland 1-G, Wetland 1-H, Wetland 1-K, Wetland 5-A, and Wetland 5-B.

EXHIBIT 5.10-1
Summary of Special-Status Species Presently Recorded within the Vicinity of the Study Area

Scientific Name	Common Name	Status	Within Study Area [a]	Within Preferred Alternative [b]
Plants				
Agalinis skinneriana	pale false foxglove	SE	Potential	No
Arctostaphylos uva-ursi	Bearberry	SR	Potential	No
Aristida intermedia	slim-spike three-awn grass	SR	Potential	No
Aster sericeus	western silvery aster	SR	Potential	No
Buchnera americana	bluehearts	SE	Potential	No
Carex aurea	golden fruited sedge	SR	Potential	No
Carex bebbii	Bebb's sedge	ST	Potential	No
Carex crawei	Crawe sedge	ST	Potential	No
Carex eburnea	ebony sedge	SR	Potential	No
Carex garberi	elk sedge	ST	Potential	No
Carex limosa	mud sedge	SE	Potential	No
Carex richardsonii	Richardson sedge	SE	Potential	No
Diervilla lonicera	northern bush honeysuckle	SR	Potential	No
Eleocharis geniculata	capitate spike-rush	ST	Potential	No
Eriophorum angustifolium	narrow-leaved cotton-grass	SR	Potential	No
Geranium bicknellii	Bicknell northern crane's-bill	SE	Potential	No
Juncus balticus var littoralis	**Baltic rush**	**SR**	**Yes**	**Yes**
Lechea stricta	upright pinweed	SX	Potential	No
Pinus banksiana	Jack pine	SR	Potential	No
Platanthera hookeri	hooker orchis	SX	Potential	No
Platanthera hyperborea	leafy northern green orchis	ST	Potential	No
Platanthera psycodes	small purple-fringe orchis	SR	Potential	No
Polgonella articulata	eastern jointweed	SR	Potential	No
Prunus pensylvania	fire cherry	SR	Potential	No
Rhus aromatica var arenaria	beach sumac	ST	Yes	No
Selaginella apoda	meadow spikemoss	SE	Yes	No
Solidago Ptarmicoides	**prairie goldenrod**	**SR**	**Yes**	**Yes**
Solidago simplex var Gillmanii	**sticky goldenrod**	**SE**	**Yes**	**Yes**
Talinum rugospermum	prairie fame-flower	ST	Potential	No
Tofieldia glutinosa	false asphodel	SR	Potential	No
Invertebrates				
Atrytonopsis hianna	dusted skipper	ST	Potential	No
Hesperia ottoe	Ottoe skipper	SE	Potential	No
Lycaeides melissa samuelis	Karner blue butterfly	FE/SE	Potential	No
Problema byssus	bunchgrass skipper	SR	Potential	No
Sympetrum semicinctum	band-winged meadowhawk	**	Potential	No
Herpetofauna				
Acris crepitans	northern cricket frog	**	Potential	No
Ambystoma laterate	blue-spotted salamander	SSC	Potential	No
Opisaurus attenuatus	slender glass lizard	**	Potential	No
Emydoidea blandingii	Blanding's turtle	FSC/SE	Potential	No
Avifauna				
Bartramia longicauda	upland sandpiper	SE	Potential	No
Clemmys guttata	spotted turtle	SE	Potential	No
Certhia americana	brown creeper	**	Potential	No
Rallus elegans	King Rail	SE		
Rallus limicola	Virginia rail	SE	Potential	No
Mammals				
Myotis sodalis	Indiana bat	FE	Potential	No
Spermopholus franklinii	Franklin's ground squirrel	SE	Potential	No

(a) Species listed as having the potential to occur within the study area by the USFWS and IDNR, (b) Species listed as having the potential to occur within the preferred alternative area by the USFWS and IDNR and/or identified during field investigations.
FE – Federal Endangered, FT – Federal Threatened, FSC – Federal Species of Concern, SE – Indiana State Endangered, ST – Indiana State Threatened, SR – Indiana State Rare, SSC – Indiana State Species of Concern, SX – Indiana State Extirpated, WL – Watch List
** - No Federal or State Status but Rarity Warrants Concern

Source: IDNR Letters August 30, 1999 and May 27, 2003; USFWS Letter January 29, 2002.

5.10.3.2 Invertebrates

5.10.3.2.1 Federally Listed Species

USFWS correspondence indicated that one endangered invertebrate, the Karner blue butterfly (Lycaeides melissa samuelis), has been found in the Ivanhoe Dune and Swale Nature Preserve directly south of the airport and the Grand Calumet River. It also occurs further west in several nature preserves in eastern Hammond. The primary population in this region is located within the Indiana Dunes National Lakeshore several miles east of the airport. In the early 1990s the Ivanhoe Nature Preserve supported a small population of Karner blue butterflies. However, due to wildfires and bad weather in 1996, the small population was extirpated from the site. The Nature Conservancy obtained permits from the USFWS to capture 20 mated female Karner blue butterflies from the Indiana Dunes National Lakeshore in 2001, in an attempt to re-introduce a population to the Ivanhoe Dune and Swale Nature Preserve. In 2002, approximately 813 pupae were transferred to release nets within the Nature Preserve and approximately 794 adults were released.

Although the Karner blue butterfly was not observed during field investigations, the wild lupine (Lupinus perennis), its host plant, was observed in the upland dunes located near the midfield triangle within the study area. The midfield triangle is located north of Ivanhoe Dune and Swale Preserve and has the greatest potential for suitable habitat for the Karner blue butterfly. Wild lupine usually occurs in savanna and barren communities, but can occur in power line rights-of-way, utility corridors, forest trails, military installations, airport runways, and other open areas that are maintained as early successional vegetative communities. Wild lupine was not observed within the Asphalt Wetlands, the primary area to be impacted by the project. The Asphalt Wetlands do not provide suitable habitat or substrate for the wild lupine.

5.10.3.2.2 State-Listed Species

The IDNR reported five state-listed invertebrate species as occurring or having previously occurred within the study area boundaries. These invertebrates included two endangered, one threatened, and one rare species. In addition, one species with no state status but rarity concern was included. A completed list of invertebrate species of special-status is included as **Exhibit 5.10-1**. No state-listed invertebrate species were observed during field investigations.

5.10.3.3 Herpetofauna

5.10.3.3.1 Federally Listed Species

The USFWS did not report any Federally listed herptiles or reptiles occurring within or near the study area, although two candidate reptiles were identified in the

correspondence. Gary/Chicago International Airport is within the range of the Eastern massasauga rattlesnake (Sistrurus catenatus catenatus), which is currently a candidate species for threatened or endangered status. The current status of this snake within the dune and swale habitats around the airport is unknown, but it was historically present.

The Blanding's turtle (Emydoidea blandingii) is a Federal species of special concern that is currently a candidate species for threatened or endangered status. According to the January 29, 2002, USFWS letter "Blanding's turtles have been found both within the Grand Calumet River and the dune and swale wetlands near the airport and may be present in any remnant dune and swale within the proposed land purchase area." Blanding's turtle preferred habitat is productive, clean, shallow waters with abundant aquatic vegetation and a soft muddy bottom over a firm substrate. This turtle will also inhabit terrestrial habitats in the spring and summer during the mating and nesting seasons, and in the fall to a lesser extent. Suitable habitat for the Blanding's turtle was not observed during the October 2003 field investigation. The majority of wetlands located within the study area are extensively disturbed and do not provide suitable habitat for the Blanding turtle.

No Federally listed herpetile species were observed during field investigations.

5.10.3.3.2 State-Listed Species

The IDNR reported four state-listed herpetiles as occurring or previously occurring within the study area boundaries. The Blanding's turtle is listed as endangered by the state of Indiana. Herpetiles of special concern includes the blue-spotted salamander. The IDNR listed the slender glass lizard and northern cricket frog as herpetiles which have no state status but whose rarity warrants concern. No state-listed herpetile species were observed during field investigations.

5.10.3.4 Avifauna

5.10.3.4.1 Federally Listed Species

USFWS correspondence listed one threatened bird, the bald eagle (Haliaeetus leucocephalus) that may occur within the range of the study area, although there is no available habitat in the vicinity of the airport. Additionally, the study area is within the range of the black tern (Chlidonias niger), currently a candidate species for threatened or endangered status. This species breeds within wetlands such as those found at the dune and swale habitats around the airport. Black terns nested several years ago along the Grand Calumet River about a mile west of the airport. Suitable habitat still remains at that site and there may be suitable habitat at other locations along the river, including

adjacent to the airport. No Federally listed bird species were observed during field investigations.

5.10.3.4.2 State-Listed Species

The IDNR reported three state-listed bird species as occurring or having previously occurred in the study area boundaries. Endangered species include the upland sandpiper and Virginia rail. Although the brown creeper does not have state status, the rarity of it in Indiana warrants concern. No state-listed bird species were observed during field investigations.

5.10.3.5 Mammals

5.10.3.5.1 Federally Listed Species

USFWS correspondence listed one endangered mammal, the Indiana bat (Myotis sodalis) that may occur within the range of the study area although there is no available habitat in the vicinity of the airport. The Indiana bat was not observed during field investigations.

5.10.3.5.2 State-Listed Species

The IDNR reported one state endangered mammal species, the Franklin's ground squirrel, as occurring within the vicinity of the study area. The TAMS report stated that one population of Franklin's ground squirrel occurs adjacent to the study area in the Dupont Tract Preserve1. The Franklin's ground squirrel was not observed during field investigations.

5.10.4 Future Conditions – 2007

The survey of potential rare, threatened or endangered species as identified in Existing Conditions, Section 5.10.3, provides baseline data to compare impacts between the No Action and Proposed Action. The following section provides a description of impacts to rare, threatened or endangered species that would be expected if either the No Action Alternative or the Build Alternatives were selected.

5.10.4.1 No Action

Under the no action alternative, the proposed expansion of the Gary/Chicago International Airport would not occur. Hence, impacts to state and Federally listed species of special status would not occur.

1 TAMS Consultants, Inc. 1991b. Illinois – Indiana Regional Airport, State of Illinois, State of Indiana, City of Chicago, Site Selection Report Appendix E, Volume II (Natural and Cultural Resources).

5.10.4.2 Improvements to Existing Runway 12-30 to Conform to Current FAA Standards

The extension of Runway 12-30 and Taxiway A by 546 feet to the northwest would result in the filling, grading and paving of much of the central portion of the Asphalt Wetland. Although Runway 12-30 and Taxiway A would only extend approximately 200 feet into the Asphalt Wetlands, improvements to the Runway 12-30 runway safety area (RSA) would require the filling and grading of a 500-foot by 1,000-foot area at the end of Runway 12-30. The airside perimeter road and southwest access roads would be relocated on this fill, but would be routed around the runway and taxiway extensions and the RSA. The removal of vegetative communities and habitat, and subsequent filling, grading and paving of this area would have permanent direct impacts on one state-endangered and two state-rare plant species known to inhabit the area. Sticky goldenrod, Solidago simplex var gillmanii, is a state-endangered species and has been identified in Wetland 1-A1. Baltic rush, Juncus balticus var littoralis, is a state-rare species and has been identified in Wetland 1-G and Wetland 1-K. Prairie goldenrod, Solidago ptarmicoides, is a state-rare species and has been identified in Wetland 1-A1, Wetland 1-A2, Wetland 1-f, Wetland 1-G, Wetland 1-H, and Wetland 1-K.

Under railroad relocation Route 1D, the EJ&E Railway track, from the south, would be routed through Wetland B and the southern portion of the Asphalt Wetland, north along Cline Avenue, then turn east parallel to the CSX Barr Subdivision tracks and cross through Clark Junction South, after which it will rejoin the original EJ&E tracks. Most of this route is alongside existing railroad tracks and roadsides where no special status species have been identified. The route would also cross through Wetland B, the Asphalt Wetland or Clark Junction South where no road or railroad route currently exists. No listed species were observed in Wetland B. This route through the Asphalt Wetlands has the potential to permanently impact one state-endangered and one state-rare plant species (sticky goldenrod, Baltic rush and Prairie goldenrod). The approximately 300-foot long railroad crossing of Clark Junction South would require placing fill in this disturbed wetland. While this area is already disturbed and contains dense cover of exotic species, natural swale topography may exist at the site. According to the IDNR August 19, 1999, correspondence, the relocation route through Clack Junction South has the potential to permanently impact one state-endangered plant species (Bicknell Northern Crane's Bill) and one state herpetofauna species of concern (Northern cricket frog).

Under railroad relocation Route 1E, the EJ&E Railway track, from the south, would follow the same alignment as Route 1D until reaching Cline Avenue. At Cline Avenue, the track would curve around the end of Runway 12-30 and turn to the southeast, parallel to the runway and through the Asphalt wetlands again before rejoining the original EJ&E Railway tracks south of the Industrial Highway crossing. As previously mentioned, the Asphalt Wetlands contain one state-endangered and one state-rare plant species (sticky goldenrod, Baltic rush and Prairie goldenrod), which may be permanently impacted by the railroad relocation.

5.10.4.3 Improvements to Provide Additional Runway Length on Runway 12-30

This phase of development proposes the extension of Runway 12 and Taxiway A by 1,354 feet, the relocation of Runway 12-30 navigational aids, the construction of two deicing/holding pads adjacent to Taxiway A, and the creation of two high speed exit taxiways between Runway 12-30 and Taxiway A. Expansion of Runway 12 to a total length of 8,900 feet would permanently impact any remaining wetlands within the Asphalt Wetlands, as a result permanently impacting one state-endangered and two state-rare plant species (sticky goldenrod, baltic rush and prairie goldenrod) located within this area.

5.10.4.4 Expansion of Existing Terminal

No special status species have been identified in the vicinity of the existing airport terminal facility. Expansion of this facility is not expected to impact any special status species.

5.10.4.5 Acquisition and/or Reservation of Sites for Future Passenger Terminal and Air Cargo Facilities

Potential future aviation-related development is proposed in two areas in the Asphalt Wetland adjacent to the proposed runway improvements under the improvements to existing Runway 12-30 to conform to current FAA standards and improvements to provide additional runway length on Runway 12-30 alternatives. While several special status species occur in the Asphalt Wetlands, reserving these sites is expected to impact these species as part of the cleanup of contaminated soils. The actual development of these areas would be defined as the need arises and will be subject to a separate environmental review at that time.

5.10.5 Summary of Findings

The locations of special status species in areas where proposed impacts would occur under the project alternatives have been described in detail in biological surveys for this and other projects and through communications with USFWS and IDNR staff.

The relocation of Runway 12-30 navigational aids would not affect any state or Federally listed species of concern beyond those impacts expected from runway and RSA construction. Most of these navigational aids are to be located adjacent or in close proximity to the runway. The Runway 30 localizer would be located 1,100 feet past the northwest end of the proposed extended Runway 12-30, in an area that would be filled and graded for the RSA and perimeter road.

The relocation of the Runway 12 threshold and the displacement of the Runway 30 threshold are not expected to disturb any state or Federally listed species of special concern.

The burial of existing power lines presently located on the east side of Cline Avenue is not expected to disturb any state or Federally listed species of special concern.

The construction of a deicing/holding pad at either end of Runway 12-30 would not have an impact on state or Federally listed species of special concern.

The relocation of the EJ&E Railway track under Route 1D, with the exception of Wetland B, the Asphalt Wetlands and Clark Junction South, is alongside existing railroad tracks and roadsides and is not expected to disturb any state or Federally listed species of special concern. No listed species were observed within Wetland B. The relocation of the railroad track through the Asphalt Wetlands has the potential to permanently impact one state-endangered and one state-rare plant species (sticky goldenrod, Baltic rush and Prairie goldenrod). Sticky goldenrod, Solidago simplex var gillmanii, is a state-endangered species and has been identified in Wetland 1-A1. Prairie goldenrod, Solidago ptarmicoides, is a state-rare species and has been identified in Wetland 1-A1 and Wetland 1-A2. The relocation of the EJ&E railroad through Clack Junction South has the potential to permanently impact one state-endangered plant species (Bicknell Northern Crane's Bill) and one state herpetofauna species of concern (Northern cricket frog).

Under Route 1E, impacts to special status species from the relocation of the EJ&E Railway track would be limited to the Asphalt Wetlands, which would be crossed twice by the track. As mentioned above, the relocation of the railroad track through the Asphalt Wetlands has the potential to permanently impact one state-endangered and one state-rare plant species (sticky goldenrod, Baltic rush and Prairie goldenrod).

The FAA recommends that the Runway 30 runway protection zone be under the control of the airport. As a result, approximately 20 acres of land southeast of the airport would have to be acquired. This area includes several acres of land adjacent to the Grand Calumet River, and several acres east of Industrial Highway. Other than the removal of residences and business, no other construction activities are proposed within this area; as such, no disturbance to state or Federally listed species of special concern is expected.

These proposed Improvements will not disturb the Federally endangered Karner blue butterfly, as the proposed areas of impacts are located in habitat that does not support wild lupine. While the USFWS has reported the presence of wild lupine in the midfield triangle area, the Karner blue butterfly has not been observed there. As no construction is proposed in this area, the project is not expected to impact the Karner blue butterfly or its potential habitat.

5.10.6 Mitigation

Impacts to the two state-endangered and two state-rare plant species (sticky goldenrod, Baltic rush, Bicknell Northern Crane's Bill and prairie goldenrod) and one state herpetofauna species of concern (Northern cricket frog) would be mitigated by the preservation or creation of dune and swale habitat as described in the mitigation plan presented in Section 5.11, Wetlands and Streams. Opportunities to introduce these species to preserved or created habitats will be explored.